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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/632,912   | 08/04/2003  | Jan-Ruei Lin         | LINJ3044/EM         | 2875             |
| 23364  | 7590        | 10/05/2005           | EXAMINER            | SAID, MANSOUR M  |
| BACON & THOMAS, PLLC<br>625 SLATERS LANE<br>FOURTH FLOOR<br>ALEXANDRIA, VA 22314 |             |                      | ART UNIT            | PAPER NUMBER     |
|  |             |                      | 2673                |                  |

DATE MAILED: 10/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                 |              |
|------------------------------|-----------------|--------------|
| <b>Office Action Summary</b> | Application No. | Applicant(s) |
|                              | 10/632,912      | LIN ET AL.   |
|                              | Examiner        | Art Unit     |
|                              | MANSOUR M. SAID | 2673         |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 04 August 2003.  
 2a) This action is FINAL.                            2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-16 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-3 and 9-11 is/are rejected.  
 7) Claim(s) 4-8 and 12-16 is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

|  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                     | Paper No(s)/Mail Date. _____ .  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|  | 6) <input type="checkbox"/> Other: _____ .                                  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
2. Claims 1-3 and 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant Prior Art (hereinafter referred to as APA) in view of Nathan et al. (2005/0007352 A1; hereinafter referred to as Nathan).
3. **As to claim 1**, APA teaches pixel circuit (figure 1) for liquid crystal display for lowering power consumption via combining an analogue and a digital circuit, the circuit comprises (figure 1, specification page 1, lines 18-25 and page 2, lines 1-8)), a thin film transistor (TFT, (figure 1, (103) for connecting a scanning line (figure 1, (103)) and a data line (figure 1, (105)), acting as a control switch of the circuit (specification page 1, lines 19-25, and page 2, lines 1-3); and a capacitor (figure 1, (107)), connecting to the thin film transistor (TFT, (figure 1, (103), where analogue or digital signals from the data line are stored (figure 1, specification page 1, lines 18-25 and page 2, lines 1-8)).

APA does not expressly teach a plurality of multiplexers, acting as switching elements for performing a plurality of output voltage transforming functions

However, Nathan teaches a plurality of multiplexers, acting as switching elements for performing a plurality of output voltage transforming functions (figures 11-13, column 1, paragraph 0012, column 4, paragraphs 0068-0072).

Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to combine Nathan's pixel having multiplexers into APA's device so as to provide a read circuit for reading data from an pixel array (column 1, paragraph 0012).

**As to claims 2 and 10,** APA teaches all claimed limitations except plurality of multiplexers comprises a first multiplexer and a second multiplexer

However, Nathan teaches plurality of multiplexers (figure 13) comprises a first multiplexer (plurality multiplexers) and a second multiplexer (plurality multiplexers) (figure 13, column 4, paragraphs 0068-0072).

Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to combine Nathan's pixel having multiplexers into APA's device so as to provide a read circuit for reading data from an pixel array (column 1, paragraph 0012).

**As to claim 3 and 11,** APA teaches all claimed limitations except a first multiplexer further comprises a general voltage terminal and a reference voltage terminal.

However, Nathan teaches first multiplexer further comprises a general voltage terminal and a reference voltage terminal (control signals, (figure 13, (A, B, C)), column 3, paragraph 0064, and column 4, paragraph 0072).

Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to combine Nathan's pixel having multiplexers into APA's device so as to provide a read circuit for reading data from an pixel array (column 1, paragraph 0012).

**As to claim 9,** APA teaches pixel circuit (figure 1) for liquid crystal display for lowering power consumption via combining an analogue and a digital circuit, the circuit comprises (figure 1, specification page 1, lines 18-25 and page 2, lines 1-8)), a thin film transistor (TFT, (figure 1,

(103) for connecting a scanning line (figure 1, (103)) and a data line (figure 1, (105)), acting as a control switch of the circuit (specification page 1, lines 19-25, and page 2, lines 1-3); and a capacitor (figure 1, (107)), connecting to the thin film transistor (TFT, (figure 1, (103), where analogue or digital signals from the data line are stored (figure 1, specification page 1, lines 18-25 and page 2, lines 1-8).

APA does not expressly teach a plurality of multiplexers connecting liquid crystal unit, acting as switching elements for performing a plurality of output voltage transforming functions.

However, Nathan teaches a plurality of multiplexers connecting liquid crystal unit, acting as switching elements for performing a plurality of output voltage (figures 11-13, column 1, paragraph 0012, column 4, paragraphs 0068-0072).

### ***Allowable Subject Matter***

4. Claims 4-8 and 12-16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. The following is a statement of reasons for the indication of allowable subject matter:

“ Wherein said second multiplexer further comprises: a selection terminal; an output terminal; a first mode terminal; and a second mode terminal”.

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hack et al. (2002/0030647) teaches uniform active matrix display.

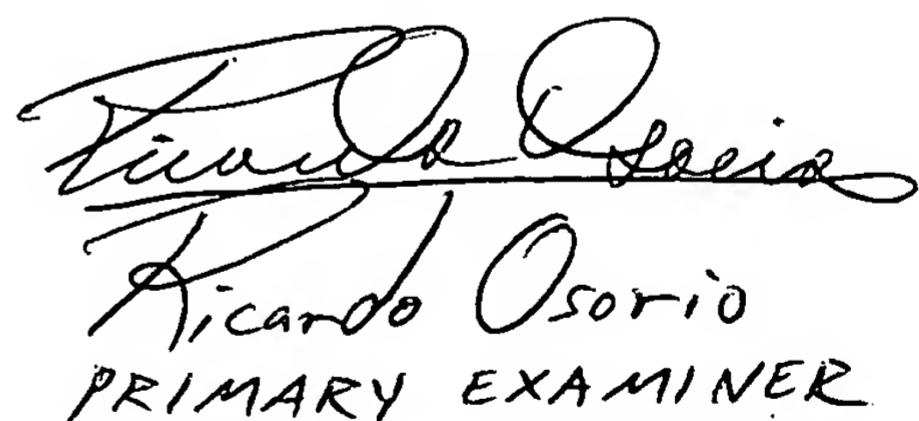
7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MANSOUR M. SAID whose telephone number is (703) 306-5411. The examiner can normally be reached on MF (8:30-6:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, BIPIN SHALWALA can be reached on (703) 305-4938. The fax phone number for the organization where this application or proceeding is assigned is (571) 272-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mansour M. Said

9/30/05



Ricardo Osorio  
PRIMARY EXAMINER